WHAT IS CLAIMED IS:

1.   A QAM constellation, comprising:
    points arranged in a non-square grid to achieve a large
noise margin, and
    to allow for fast convergence of blind equalization
algorithms.

2.   The QAM constellation of claim 1, wherein said points are
selected to use low word widths.

3.   A method for improved shell mapping comprising:
    providing a non-square grid QAM constellation and employing
points of said constellation in said mapping.

4.   A transmitter, comprising:
    a symbol mapper for receiving inputs,
    a filter for each output of said mapper, and
    a modulator for receiving said filter's outputs and
providing an output signal.

5.   The transmitter of claim 4, wherein said mapper employs a
non-square grid QAM constellation.

6.   A slicer for a receiver, comprising:
    a pre-programmed look-up-table for receiving I and Q
components and generating indexes of n constellation elements, and
    a distance calculator which calculates the Euclidean
distance from a slicer input to the n constellation elements pointed
to by the look-up-table to determine the constellation element to be
output.

7.   The slicer of claim 6, wherein said distance calculator employs an adder and squaring unit.

8.   A receiver, comprising:

a demodulator for receiving an input signal and outputting a data stream,

a filter for said data stream, and

a slicer for converting said data stream to a constellation point.

9.   The receiver of claim 8, wherein said receiver is a blind receiver employing a super exponential algorithm or a CMA.

10.   The receiver of claim 9, wherein said constellation points are selected from $\{0,1,e^{2\pi j/7},e^{4\pi j/7},e^{6\pi j/7},e^{8\pi j/7},e^{10\pi j/7},e^{12\pi j/7}\}$.

11.   A QAM constellation labelling method, comprising:

labelling each point so that the Hamming distance between each neighboring pair is one, and

labelling such pairs to minimizing the Hamming distance when the distance can not be set to one.

12.   A method for minimizing bit error for Trellis code modulation, comprising:

labelling uncoded bits to minimize bit error rates, and

labelling coded bits in accordance with Trellis coding modulation while minimizing the Hamming distance between source bits.